METHOD AND APPARATUS FOR CLASS INITIALIZATION BARRIERS AND ACCESS TO CLASS VARIABLES IN MULTITASKING VIRTUAL MACHINES

ABSTRACT

One embodiment of the present invention provides a system for efficient class initialization barrier and access to class information private to a task that enables sharing between multiple tasks/virtual machines of both interpreted platform-independent code and the equivalent native code produced at runtime, wherein a class initialization barrier guarantees that a task initializes a class before the class is first used by the program executed by the task. The system operates by associating the shared runtime representation of classes with tables of pointers to task class mirror objects that hold the task private representation of a class. Entries of task class mirror tables are used both as a mean to encode the initialization status of the associated class for a plurality of tasks, and to provide access to the task private representation of a class loaded by a task irrespectively of the initialization state of the class for this task.

34